

Title (en)

AUTOMATED VEHICLE GPS ACCURACY IMPROVEMENT USING V2V COMMUNICATIONS

Title (de)

VERBESSERUNG DER GPS GENAUIGKEIT EINES AUTOMATISIERTEN FAHRZEUGS MIT V2V-KOMMUNIKATION

Title (fr)

AMÉLIORER LA PRÉCISION DU GPS D'UN VÉHICULE AUTOMATISÉ AVEC COMMUNICATION V2V

Publication

EP 3379290 A1 20180926 (EN)

Application

EP 18161585 A 20180313

Priority

US 201715467707 A 20170323

Abstract (en)

A navigation system (10) for use on an automated vehicle includes a global-positioning-system-receiver (14) (GPS-receiver (14)), a vehicle-to-vehicle-transceiver (24) (V2V-transceiver), an object-detector (32), and a controller (28). The GPS-receiver (14) indicates a receiver-coordinate (16) of a host-vehicle (12). The receiver-coordinate (16) is characterized by a receiver-error (20). The V2V-transceiver receives a GPS-coordinate (26) from each of a plurality of other-vehicles (22) proximate to the host-vehicle (12). The object-detector (32) determines a distance (34) and a direction (36) relative to the host-vehicle (12) to each of the plurality of other-vehicles (22). The controller (28) is in communication with the GPS-receiver (14), the V2V-transceiver, and the object-detector (32). The controller (28) is configured to adjust each GPS-coordinate (26) from each of the plurality of other-vehicles (22) based on the distance (34) and the direction (36) and thereby provide a plurality of adjusted-GPS-coordinates (40) that coincide with the host-vehicle (12), and combine the plurality of adjusted-GPS-coordinates (40) with the receiver-coordinate (16) to determine a host-coordinate (42) that is characterized by a location-error (44) less than the receiver-error (20).

IPC 8 full level

G01S 13/86 (2006.01); **G01S 13/89** (2006.01); **G01S 13/931** (2020.01); **G01S 17/86** (2020.01); **G01S 17/89** (2020.01); **G01S 17/931** (2020.01)

CPC (source: CN EP US)

G01S 13/86 (2013.01 - EP US); **G01S 13/89** (2013.01 - EP US); **G01S 13/931** (2013.01 - EP US); **G01S 17/86** (2020.01 - EP US); **G01S 17/89** (2013.01 - EP US); **G01S 17/931** (2020.01 - EP US); **G01S 19/05** (2013.01 - US); **G01S 19/13** (2013.01 - CN); **G01S 19/215** (2013.01 - US); **G01S 19/40** (2013.01 - US)

Citation (search report)

- [X] US 5983161 A 19991109 - LEMELSON JEROME H [US], et al
- [A] US 2014070980 A1 20140313 - PARK MAN BOK [KR]
- [A] US 2014107890 A1 20140417 - FUNABASHI JUNICHIRO [JP]

Cited by

EP3709057A1; WO2020182809A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 3379290 A1 20180926; CN 108627854 A 20181009; CN 108627854 B 20221216; US 10094933 B1 20181009; US 2018275282 A1 20180927

DOCDB simple family (application)

EP 18161585 A 20180313; CN 201810240519 A 20180322; US 201715467707 A 20170323